

United States Patent [19]
Hyman

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[54] **TWO-HEADED BRUSH**

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[51] Int. Cl. **A46b 9/04**

[58] Field of Search **15/167 R, 106, 110**

[56] **References Cited**

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[57] **ABSTRACT**

A two-headed brush particularly useful as a toothbrush havin a tapered design with two groups of bristles, one extending laterally from a relatively broad head portion and the other extending laterally from a narrow end portion. A roughened central handle portion is provided for a firm grip.

2 Claims, 10 Drawing Figures

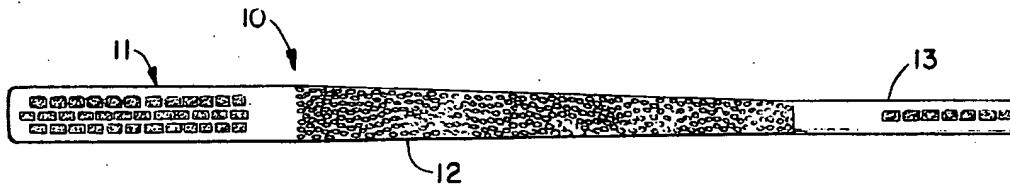


FIG. 1.

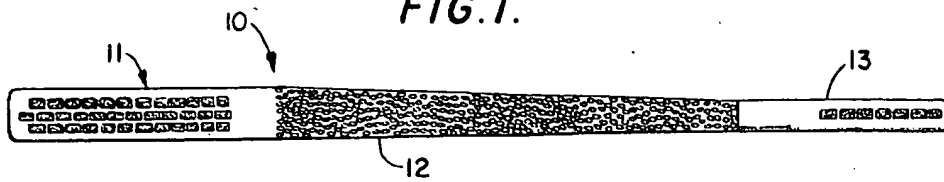


FIG. 2.

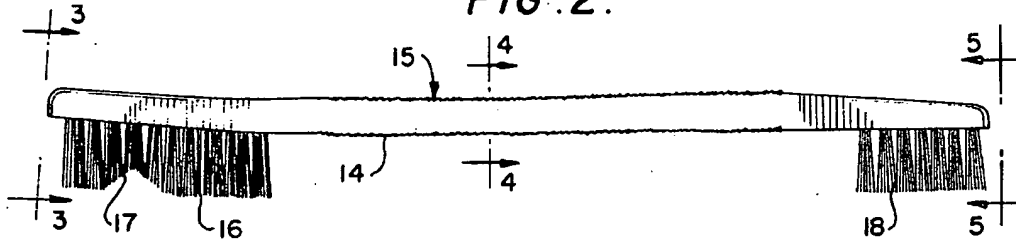


FIG. 3.



FIG. 4.



FIG. 5.

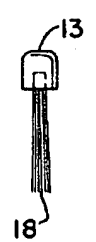


FIG. 6.

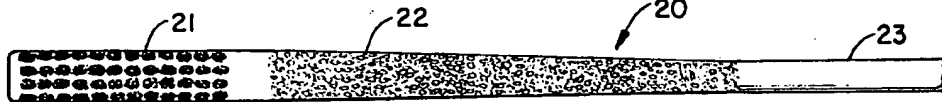


FIG. 7.

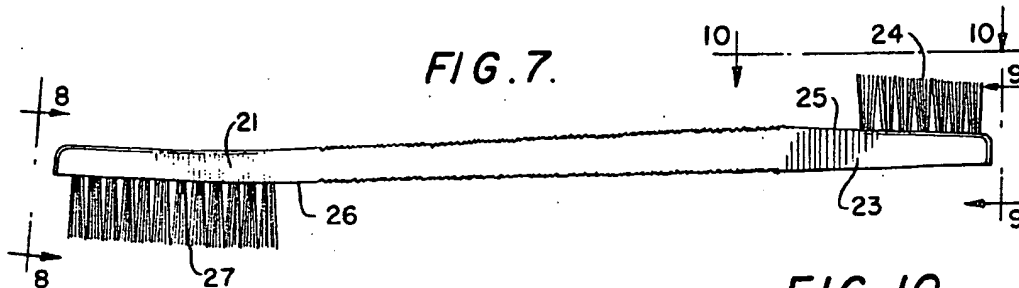


FIG. 8.

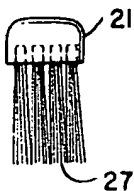


FIG. 9.

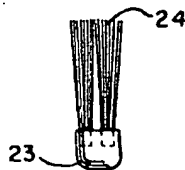
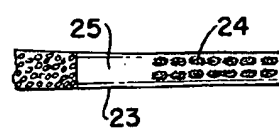


FIG. 10.



TWO-HEADED BRUSH

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to a two-headed brush having a general utility and, more particularly, to a two-headed toothbrush.

2. Description of the Prior Art

Two-headed brushes having a variety of figurations and brush heads are known in the art. But in almost all cases, they employed a handle which had the same dimensions at either end. In those instances where one end of the brush handle was smaller than the other, the brush on the smaller portion was either too small to do an effective cleaning job or was situated in such a manner as to make cleaning of narrow crevices difficult. This inability of brushes of the prior art to effectively clean narrow areas is particularly evident in the case of toothbrushes. For years it was a popular concept in dentistry that brushing teeth with up and down strokes would be sufficient to prevent tooth decay if practiced on a regular basis. However, recent developments in preventive dentistry have emphasized the importance of thoroughly cleaning plaque from the teeth, particularly the base of the teeth near the gingival margins (gum line), the sulcus (a narrow depression at the gum line), and periodontal pockets. Plaque contains many types of bacteria and is an almost ideal environment for proliferation of bacteria. When allowed to colonize undisturbed in unremoved plaque, acid wastes of some bacteria cause periodontal disease, a destructive deterioration of the gingiva, and if allowed to progress sufficiently, the supporting bone structure. The heaviest concentration of bacteria laden plaque is normally in the gingival crevice (sulcus) between the gum and the tooth.

As previously indicated, because of the size of the brush heads on conventional brushes, even the previously known two-headed brushes, they are unable to effect removal of plaque at the gum line without causing serious discomfort and irritation to the gum. These problems have been overcome by the present invention.

SUMMARY

The present invention relates to a two-headed brush comprising an elongated handle having a tapered structure, bristles secured to a relatively broad head portion of said handle and extending laterally therefrom, a second group of bristles attached to a narrow end portion of said handle and extending laterally therefrom, and a central grip portion located between said head and end portions. The present brush is particularly useful as a toothbrush although it also may be used as a general purpose cleaning brush. In these applications, the handle may be notched to permit a "custom-fit" for weapons, machines, and the like.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a plan view of a brush constructed in accordance with the present invention.

FIG. 2 is a side elevation of the device shown in FIG. 1.

FIG. 3 is an end view taken along 3—3 of FIG. 2.

FIG. 4 is a cross-section taken along line 4—4 of FIG. 2.

FIG. 5 is an plan view taken along line 5—5 of FIG. 2.

FIG. 6 is a plane view of an alternate embodiment of the present invention.

FIG. 7 is a side elevation of the device shown in FIG. 6.

FIG. 8 is an end view taken along line 8—8 of FIG. 7.

FIG. 9 is an end view taken along line 9—9 of FIG. 7.

FIG. 10 is a fragmentary view of the lower end of FIG. 7 taken along line 10—10.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

In the arrangement of FIG. 1-5, a generally straight, elongated handle, shown as 10, is provided with a head portion 11, a tapered central grip portion 12 and a narrow end portion 13. In FIG. 2 the front surface of the handle 10 is designated 14 while the rear surface is indicated as 15. Both the front and rear surfaces of the grip portion 12 are shown in FIGS. 2 and 4 as being roughened or pebbled. Such a surface permits a firm grip and inhibits slippage of the brush when in use. The handle may be formed of a conventional synthetic material although polypropylene is preferred. When formed from polypropylene, the handle will be highly resistant to the chemical interaction with most cleaners, hydrocarbons, alcohols, solvents and water. In addition, the handle can be bent to conform to various cleaning tasks. The head portion 11 is provided with a plurality of tufts of bristles 16 which extend laterally from the front face thereof and are notched as at 17 to facilitate cleaning "around corners" and under lips and rims. As shown in FIG. 1, and more clearly in FIG. 3, the tufts of bristles are set in three rows although numbers of rows presented on the head portion is not a critical feature of the invention. The tufts may be disposed in transverse staggered rows as in FIG. 1 or in a parallel formation as illustrated in FIG. 6. The bristles may be flared inwardly and have their outer ends cut away to present a conical formation or in the preferred form illustrated in the drawings, they will be flat-trimmed. Although the bristles may be of animal, vegetable, or synthetic origin, it is important in the case of a toothbrush that they be relatively pliable so as to avoid irritation of the gingiva during brushing. It has been found that soft nylon bristles having rounded ends give the best results for this application. The spacing of the tufts in relation to one another is also significant in a toothbrush in that it may affect the ability of the brush to cope with the anatomy of the teeth. Merely by way of example, a head portion having a length of $1\frac{1}{2}$ in. and a width of $\frac{3}{8}$ in. set with 18 tufts of bristles comprising 0.007-0.008 in. diameter strands and a strand count of 32-40 will be sufficient for purposes of this invention.

The narrow end portion 13 in FIGS. 1 and 5 is provided with a single row of flat-trimmed bristles 18. The narrow width of this brush head and the tapered structure of the grip portion 12 facilitates maneuvering the brush into confined areas in machines, weapons, and the like, where a stroking action may be applied to provide a more efficient cleaning of that area. As will be shown hereinafter, the narrow end portion and tapered structure of this invention is particularly important in a toothbrush.

FIGS. 6-10 show an alternate embodiment of the present invention which is especially useful as a toothbrush. As here illustrated, the head portion 21, central grip portion 22, and narrow end portion 23 of handle 20 are substantially the same as in the structure of FIG. 1-5. However, in this embodiment, the center line of the grip portion is slightly diagonal and connects the center line of the head portion with the somewhat offset center line of the narrow end portion. Also, as shown in FIG. 7, the narrow end portion 23 has tufts of bristles 24 set in two rows on its rear surface 25 opposite the tufts of bristles 27 set in four rows on the front surface 26 of the head portion 21. It is also possible and in some cases preferable to set one row of tufts of bristles in the end portion 23. The offset configuration and the reversed positioning of the groups of bristles facilitates proper handling of the toothbrush so that any one of the brush heads may be positioned properly within the mouth. The tapered structure of the handle and the narrow end portion are especially significant in this regard. In order to penetrate the sulcular area along the line where the teeth and gums meet, it is necessary to hold the brush at an angle, preferably a 45° angle. The structure of the present invention permits a user to easily position the brush within the mouth in this manner. Furthermore, the dual rows of bristles illustrated in FIGS. 9 and 10, are able to push aside the gingiva and brush down into the sulcus or pockets at the base of the teeth and remove food debris or bacteria-rich plaque. Of course, this could also apply to a single row of bristles as illustrated in FIGS. 1 and 5. A fuller brush with the conventional amount of tufts of bristles will not function with the same results since those bristles not adjacent the sulcular area and in contact with the ex-

posed portion of the teeth seriously impede penetration into the sulcus and periodontal pockets.

The provision for four rows of bristle tufts in the head portion as illustrated in FIG. 8 merely facilitates a more thorough whisking action in brushing the exposed portions of the teeth.

The invention may be embodied in other specific forms without departing from its spirit or essential characteristics. The present embodiments are, therefore, to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the claims rather than by the foregoing description, and all changes which come within the meaning and range of the equivalents of the claims are therefore intended to be embraced therein.

I claim:

1. A toothbrush comprising a narrow end portion, a first group of tufts of soft nylon bristles secured in two rows in said end portion and extending laterally therefrom, a central gripping portion having a pebbled front surface and a pebbled rear surface for receiving the hand of a user of said brush; said gripping portion being tapered and integral with said end portion, a head portion integral with said central gripping portion and being relatively wider at its maximum cross-section than said end portion, a second group of tufts of soft nylon bristles secured in four rows in said head portion and extending laterally therefrom, said second group of tufts being wider at its maximum cross-section than said first group of tufts, the bristles in said first and second groups being flat-trimmed and end-rounded.

2. A toothbrush as defined in claim 1 wherein said first group of tufts of bristles is set in one row.

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